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THE JOURNAL OF PHILOSOPHY

ARE THERE ANY NECESSARY TRUTHS?[1]

AT the beginning of this paper I may say that I wish, if possible, to exclude the consideration of all epistemological questions of a certain type. I wish to do this, because I find that it does not help me, in my endeavor to answer the question before me, to maintain that everything is experience, or that whatever is known must be related to a knower, and the like. These positions may be true,[2] but if they are, then the question which I have before me concerns differences that are independent of these generalities.

In the investigation of the question or problem, I find two aspects, namely, the historical, *and* the logical or systematic. I shall pay attention to the historical aspect only, for the most part, in order to give the question a more concrete meaning. The greater part of my paper will be a systematic inquiry.

Considered historically, and more concretely, the question means to me this: Are such propositions as the following necessary truths?

(1) Every effect has a cause.
(2) Every cause has an effect.
(3) Something can not come out of nothing.
(4) Every quality must be a quality of a substance.
(5) The whole is greater than any of its parts.
(6) $2 + 2 = 4$.
(7) All parts of space are parts of the same space.
(8) Everything is related to everything else.
(9) All related things are dependent on one another.
(10) Everything implies its contradictory.

This list might be added to indefinitely.

As regards these specific propositions, it is well known that some of them are not now regarded as necessary truths, while some of them may still be so regarded. In the latter case, it is my purpose to inquire, *Why?* However, in answering my question, Are there any necessary truths?, I do not find myself under any obligation to say what these truths are, if there are any, although to give a list, partial or complete, of such truths, would doubtless be of interest. It may be quite possible to show that *there are necessary truths* without dis-

[1] Read by invitation at the annual meeting of the Eastern Division of the American Philosophical Association, at Philadelphia, December, 1928.

[2] Cf., pp. 327–328.

closing a single instance of such a truth, unless it should turn out that this proposition is itself necessarily true.

I do find, however, on entering into a careful and systematic inquiry, in order to answer the question before us, that I am under the obligation, for purposes of clarity, to define certain terms and to make certain distinctions. The question demands that the terms "necessary" and "truth" should be *defined* and made clear; perhaps, also, the meaning of "are" as a form of the verb "to be." But the question also raises the problem, even though it may not demand this, whether certain distinctions must not be made. Does the question, Are there any necessary truths?, mean, Are there any necessary propositions? or does it mean, Are there any *necessarily true propositions?* The first form of the question identifies a "truth" and a "proposition"; the second form would distinguish between these two, for it would allow of (*a*) propositions which are false, (*b*) propositions which are actually, but not necessarily, true, and (*c*) propositions which are necessarily true. If there are false propositions, then a "truth" and a "proposition" can not be identical.

Accordingly, to clarify my discussion of the main problem, whether anyone will agree with my distinctions or not, and realizing that these distinctions raise further problems which can not [3] come within the domain of this paper, I distinguish, in discourse, (*a*) the series of *symbols* (words, sentences, and the like); (*b*) judgments, as psychical processes, (*c*) propositions as objective relational complexes between terms, either simple or complex, and (*d*) truth and falsity as somehow involved in this situation. *How,* will be a matter discussed later. My reasons for making these distinctions are as follows: First, different persons can know, judge, be aware of, the same objective state of affairs; the former factor varies, while the latter remains constant. Therefore these two factors are not identical. Secondly, the symbols, which I regard as both formulating the judgment and as symbolizing the objective state of affairs, or the proposition, can vary, for example, from language to language, while the proposition remains constant. Therefore, again, the symbols and the proposition are distinct. My definitions, then, are as follows: (1) A proposition is an objective relation of, or between, objective [4] terms. Any two terms, as related in any way, *are* a proposition. A judgment is an awareness of this objective state of affairs. A sentence, a statement, an equation, and the like, is a formulation of the judgment, and a symbolization of the proposition.

[3] For lack of space.

[4] I realize that I have not defined "objective," but one can not define everything.

Only propositions imply, or, whatever implies is a proposition. Judgments as such do not imply. They are awarenesses of propositions. Sentences, statements, equations, symbols are means of formulating one's own judgments, and of conveying judgments to other persons, or of getting other persons to have judgments.

It follows from this analysis that the correct form of our question is: *Are there any necessary propositions?* It also follows that there are no false propositions. So-called false propositions are statements or assertions that something is a fact which is not. And false or erroneous judgments are awarenesses in which something is taken to be what it is not. A true judgment is, then, an awareness of what is. The judgment is true in that there is disclosed in it *something that is, in some sense.* Briefly *truth* is *disclosure*[5] or, perhaps better stated, "where" there is disclosure, there is truth. Thus, if the outcome of this paper is a true judgment, that truth will be identical with the disclosure, in the judgment, either of the fact *that there are,* or of the fact *that there are not, necessary propositions.*

It will doubtless be objected at this point that the proposition, that truth is disclosure—of what *is,* is not itself a necessary proposition. The objection will at this point be granted, only subsequently to be answered. But the objection is granted only because there are, as is well known, other theories as to the nature of truth. But if the "disclosure theory" can not lay claim to being a necessary proposition, no more can opposed theories. These are, one and all, only hypothetical theories. That much at least is disclosed concerning them by an examination of their structure. Whether or not, if these opposed theories are hypothetical, the "disclosure theory" is also of this character, remains to be seen.

These opposed theories of the nature of truth I classify, as is perhaps common, into three, namely the "copy-theory," the "coherence theory," and the pragmatic theory. I shall treat these briefly, which is all that is necessary for my purpose. But some consideration of the nature of truth is required, especially if the terms "necessary" and "truth," as contained in the original formulation of our question, are to be defined.

I select, first, for brief examination, the so-called "copy-theory." This theory is too well known to warrant much discussion. All I wish to do is to indicate its hypothetical character. Obviously, *if* there can be a one-one correspondence between an idea or awareness and an object, or between a psychical process and an objective com-

[5] Dr. Kirby Miller has suggested, in discussion with me, the term "apprehension" as meaning much the same as disclosure. If there is a difference between these two terms, it is one of emphasis. "Disclosure" stresses, it seems to me, what would usually be called the "objective" aspect, "apprehension" the "subjective" side.

plex, then such correspondence may be asserted to be identical with the truth of that idea or that process, and absence of such correspondence to be falsity. Clearly the form of the argument for this theory is the conditional form, if *a* is *b*, *c* is *d;* if *c* is *d*, *e* is *f*, etc. The "copy-theory" of truth is, then, itself not necessarily true; it is only conditionally true. Stated in the propositional form, "True ideas are copies of objects," it is not a necessary proposition. There are other possibilities. But even to establish it as a fact that some ideas copy their objects, and that some do not, would demand that one allow that the "copying relation" is itself *disclosed,* as well, also, as each of the two terms, the idea and the object, that are involved in this relation. Thus the copy-theory presupposes disclosure. Either this, or one must admit that there is an idea which itself is a copy of the copying, and so on, *ad infinitum.* But this is, again, disclosure of the denumerable infinite. Finally one comes to an "idea," in this series, that at least can not be shown *necessarily* to be a copy—indeed, that would seem not to be this. It may be a copy, but it may not be. Thereby there is *disclosed* the hypothetical character of the "copy-theory."

The other two theories, the "coherence theory" and the pragmatic, are no better off than the copy-theory in this respect. Each is hypothetical, each is a possibility, but neither theory is based on, nor is either theory itself, a necessary proposition. Thus that truth is coherence or that it is satisfactory working, confirmation, validation, and the like, is in neither case a necessary state of affairs. And both theories presuppose that something is *disclosed* at certain points, and nothing more.

Each one of these theories may be examined briefly. First, the "coherence theory." The hypothetical or conditional character of this theory may be indicated as follows: *If* judgments or propositions (in the "coherence theory" it is never clear which is meant) cohere—absolutely, then they are true—absolutely. But further: *If* judgments or propositions are consistent, then they cohere; and, still further, *if* judgments and propositions do not contradict, then they are consistent. Or—another hypothesis—*If* judgments or propositions are related and *so* mutually influence one another, then they cohere. This second definition of coherence involves still another hypothesis or possibility, namely, that, *if* judgments or propositions are related, then they mutually influence and change one another. That related "things" are thus mutually dependent, is a possibility, but it is certainly not a necessary state of affairs.

The definition of truth as coherence is, then, *conditioned* by certain assumptions. With these assumptions made, the "coherence

theory'' can be deduced as a consequence. But there is no necessity whatsoever for making these assumptions. They are not necessary propositions. Further, the nature of coherence can be deduced from two alternative hypotheses, the one defining this term as absence of contradiction, the other defining it as the mutual modification of related terms. Which of these two alternative hypotheses is accepted by the adherents of the theory, or whether both hypotheses are accepted, I have never yet been able to ascertain. But, in either case, the adherent of the ''coherence theory'' is committed to the opposed theory of disclosure. Where there is the absence of contradiction and the presence of consistency, such absence and presence must be disclosed, and only provided that there is truth in the sense of the disclosure of these two ''states of affairs'' (if they are different), can any further definition of truth as identical with coherence be deduced. Likewise in the case of the alternative definition of coherence as meaning the mutual modification of terms. This alternative theory presupposes that it is *disclosed* that related terms do mutually modify one another. Thus the coherence theory of truth, like the copy-theory, pre-supposes that truth is not coherence, but disclosure. Further, the norm of consistency stands, not because it is consistent with anything else, nor because it is related to other terms, *but by itself*. And the norm of mutually modifying related terms is accepted, not because of its relation to, or dependence on, any other norm, but in isolation; not because it is consistent with other norms (which I doubt), but quite irrespective of such possible consistency or its absence.

On these grounds it would be easy to convict the coherence theory of being self-contradictory, but I forego the pleasure of pressing the indictment. However, a few further comments concerning the two basic norms of the coherence theory are required for the development of our main theme.

One definition of coherence is in terms of consistency. And consistency is in turn defined as absence of contradiction. A coherent system of propositions is, then, a system that contains no two propositions that contradict each other. But, of two contradictory propositions, each can find a place in two different, distinct systems. Thus the Euclidean Geometry and the Geometry of Bolyai and Lobatschewsky each contain, as is well known, a proposition concerning parallels, but the two propositions in the two systems are the contradictory of each other. In the Lobatschewskian Geometry there is the proposition that through a point in a plane there are an infinite number of parallels to a line in that same plane. In the Euclidean Geometry, there is the contradictory proposition, that there are not an infinite number of such parallels, but only one.

Contradictory propositions or states of affairs can thus find a place in different objective systems or in different logical *loci*. The contradiction is rendered quite harmless by this exclusion into different systems. It is only within the same system that contradictions can not occur, on pain of the system not being a system. But consistency carries with it nothing more than this. It does not carry with it either the relation of implication between all parts of the system, nor the mutual dependence of such parts on one another. The "independence proof" in Geometry shows, first, that two propositions can be consistent, and yet not imply each other. It also shows, secondly, that two propositions can be related, and yet be independent. In the face of this analysis, the adherent of the coherence theory can get little comfort from the norm of consistency, since, if we may state the matter in a paradoxical way, consistency is quite consistent both with independence and lack of implication within the same system, and with *contradiction* as between two propositions in two distinct systems.

Let us now consider the pragmatic theory of truth. This, too, is not a necessarily true theory of truth, but only a conditionally true theory. *If* all structures and functions that are found in living organisms evolve; and *if* all that evolves has the character of usefulness in some sense, either now, or in the future, or in the past, then the truth of scientific laws and theories, of religious beliefs, and of mathematical and logical principles and the like, may be identical with usefulness, with satisfactory outcome, with confirmation and validation by directly experienced fact. But the conclusion is conditioned by the assumption—by the "antecedent," and this is not a necessary proposition. Further, it may be asked whether, if this antecedent be regarded as true *in fact*, if not of necessity, it is so regarded because it is a theory that works satisfactorily, that is useful, and the like, or because it is a state of affairs that is disclosed. Briefly, assuming that the pragmatic definition of truth is derived from the concept of evolution, is evolution itself true in that it is a useful theory, or is it true in that it is that objective state of affairs which is disclosed to, or as a result of, scientific investigation? I myself have only one answer to this question, and that is, that the pragmatic definition of truth in terms of *process and outcome* presupposes the opposed definition of truth as identical with the disclosure of fact.

To summarize this discussion: None of the three theories of truth that have been considered is itself necessarily true. Each is a possibly or conditionally true theory; and some one of the three *might* turn out to be true *in fact*. Also, it may be that none of the three have this outcome. All three theories, however, presuppose the

extraneous definition, that there is truth "where" there is disclosure—of facts, of states of affairs that are distinct from the disclosure itself, even as the searchlight is distinct from the objects that it reveals. I would claim that this theory is true in fact, but if it is not, and, also, if no one of the other three theories is true in this sense, then some other theory must be true. Either all three of the theories discussed must be false in fact, and some other theory must be true in fact, or some one of the three must be true in fact, and the other two false. That which is necessary is not that any one of these three theories should itself be true in fact, but *either* that some one of these theories *or* that some other theory should be true in that sense. That which is *necessary* is, then, that which is expressed in the form of "either—or." In other words it is the well-known principle of alternative possibilities or of disjunction. ***That is necessary to which there is no alternative, and there is no alternative to there being alternatives.*** For, to deny this, is but to use or assume the principle itself, in the form of the disjunction between assertion and denial, between positive and negative. The principle of alternative possibilities, of disjunctives, is thus presupposed by its own denial. Its denial is thus impossible. The necessary becomes, then, that whose negative or whose denial is impossible.[6] Conversely, as it were, that is necessary which must be asserted. The impossible, on the other hand, is that which must be denied, or, it is that whose denial is implied in the attempt to assert it. It is the *negative* of the necessary.

It is thus that the *fact of necessity* may be said to be disclosed. If a certain state of affairs, namely, that of alternatives or disjunctives, is found to be necessary, then *there is necessity,* and conversely, if there is necessity, then something must be necessary. That which is necessary is *alternatives,* or *alternative possibilities.*

One may state this in syllogistic form as follows, using one of the above definitions of "the necessary":

That to which there is no alternative is necessary; The principle of disjunction is that to which there is no alternative, since to deny this is to presuppose it; Therefore the principle of disjunction is necessary.

If, now, disjunctives, alternative possibilities, are necessary, then there must be alternatives to necessity itself, and there are. These alternatives are *the impossible, the possible,* and *the actual.* Each of these is to be defined as follows:

The possible is that which can be denied.

As an example, the Newtonian Mechanics.

The *impossible* is that which *must* be denied.

As an example, the proposition, there are *no* alternatives.

[6] Cf., C. I. Lewis, *Survey of Symbolic Logic,* Chap. V, especially pp. 332–339.

The necessary is that which can not be denied. For example, there *are* alternatives.

The actual is, by exclusion, then, on the one hand, not the impossible, and not the necessary; on the other hand, it is identical with the possible, but it is more than the possible in that it can be asserted. For example, *Necessity* itself is a possibility, but it is also an actuality. It is not impossible, and it may be necessary or not.[7]

In a similar way, distinguishing between *possibility* and *possibles* (that which is possible) and between *impossibility* and *impossibles*, one can say:

Possibility is both possible and actual. There are alternatives to it, for example, impossibility, so that it can be denied. It is, therefore, itself *a* possibility. But it can also be asserted. It is, therefore, an actuality.

But, likewise, *impossibility* is both possible and actual. That it is itself a *possibility* is shown by the fact that it is an alternative to the necessary and the possible. But it is also an actuality. For it can be asserted.

What else does one do but assert the *actuality of impossibility* when one defines the necessary as that whose denial is *an impossibility?* [8]

And again, what else does one do but assert the fact of impossibility, when one defines "strict implication," after the manner of some modern logicians, in the form, "*p* implies *q*, if it is *impossible* that *p* be true, and *q* false." [9] *P* being true and *q* false, is, in this case, an *instance* of *actual impossibility*. In comment on this definition of implication it may be said that thus to define this relation, namely, in terms of the impossibility of *p* being true and *q* false, is but to say, since the negative of the impossible is the necessary, that *p* implies *q*, if, *p* being true, it is *necessary* that *q* be true. In other words, "*p* implies *q*" means that *p* necessitates *q*, (which is the traditional definition of implication).

Necessity, possibility, impossibility, and actuality are, then, all real or actual, and also possible. No one of them is impossible and it may be that none is necessary. That which is necessary is, at least, the disjunction which they form. Distinct from them is that which is necessary, possible, impossible, and actual, that is, necessities, possibilities, impossibilities, and actualities. These are the instances, the members of the class.

It is evident that the endeavor to answer the question with which we started has led us to the examination of what have been regarded as four fundamental categories, and of the relation of

[7] Subsequently necessity is found to be necessary, p. 328.

[8] Lewis, *Survey of Symbolic Logic*, pp. 304, 336.

[9] Lewis, *Survey of Symbolic Logic*, pp. 332–333.

these categories to one another. But that endeavor has also led us to certain specific definitions of (*a*) propositions, (*b*) truth, and (*c*) necessity. Those definitions are: (1) that a proposition is an objective relational state of affairs;; (2) that truth is disclosure, and (3) that the necessary is that to which there is no alternative; also, that whose denial or negative is impossible.

By these definitions we can now answer our major question, which I will at this point state in the form, Are there any necessarily true propositions? My answer is, *There are.* What is one such proposition? The answer is, the proposition, *There are possibilities or alternatives* (contradictories or contraries), is a necessarily true proposition. Why do I state this to be a necessarily true proposition? The answer is, (1) It is a *proposition,* because it is a disclosed objective state of affairs consisting of a relation between possibilities *and* actuality. (2) It is *a necessary proposition* because *its necessity is disclosed by the attempt to deny it.* When that attempt is made, there is disclosed the fact that the denial presupposes the very principle denied. Its very denial is its affirmation. It can not, therefore, be denied, but must be affirmed. Whenever or wherever this fact, namely, that something must be affirmed and can not be denied, is disclosed, *then something that is necessary is disclosed.* (3) The proposition, *There are alternatives* (possibilities), is a *necessarily true proposition* just and only because, in accordance with that definition of truth which was previously arrived at, namely, that truth is disclosure, *a proposition is disclosed and its necessity is also disclosed.* Such a twofold disclosure is all there is to the truth of the necessarily true proposition that we are here considering, namely, the proposition, There are alternatives. As a necessarily true proposition this proposition is identical with the (objective state of affairs of the) *necessity of the actuality of possibilities.*

At this point it is of interest to compare this proposition with the proposition, "There is implication," with "imply" defined, as we have above found it is defined, as identical with "necessitates." This merely means that implication is *one* instance of necessity. Is, now, this proposition, "There is implication," itself a necessarily true proposition? I do not find that it is. To deny implication is not to affirm it. It can be denied; it need not be affirmed, but it can be. It is, therefore, only an actuality. It is not a necessity. It is only *the actuality* that there are cases where *p necessitates q.* But there are also cases where *p* does not necessitate *q.*

If implication is thus a relation of necessity, although not itself necessary, and if the actuality of possibilities is itself necessary, we can, then, by endeavoring to find what possibilities themselves imply, discover further necessarily true propositions, or, rather, proposi-

tions that are disclosed as *necessitated* by a necessary proposition. To this endeavor we shall now devote ourselves.

Possibilities — alternatives — themselves have alternatives or "kinds." Thus there are, as is well known, the two alternatives, in dealing with alternatives, (1) of the positive and the negative,—contradictory alternatives, and (2) of positives—contrary alternatives. If, now, the actuality of possibilities or alternatives is necessary, then that which these possibilities necessitate has derived necessity. What propositions, what objective relational states of affairs are, then, necessitated by the fact of possibilities—of each of these two kinds?

Let us first consider contradictory possibilities. First, I find that these possibilities necessitate the difference between the positive and the negative, between affirmation and denial, between "yes" and "no." That this is the case may, I think, be shown as follows:

One definition of that which is necessary is: That is necessary to which there is no alternative. But there is no alternative to there being alternatives. For, to deny that there are alternatives is but to use or assume the principle of the alternative of denial or of negation. The *principle of contradictory alternatives* is thus presupposed by its denial. I suppose that this is only a demonstration of that which is a well-recognized position in logic, namely, that *negation* is a fact that is necessary. Paradoxically perhaps, negation is an actuality, but it is a necessary actuality. It is presupposed by its denial.

That *there are contradictory alternatives* is, then, I should say, a necessarily true proposition; this proposition is disclosed as an objective state of affairs; its necessity is also disclosed. Such disclosure is its truth.

With the principle of negation thus discovered by the examination of what the necessity of alternatives itself implies, and by the endeavor to find *why* it is that the principle of alternatives is necessary, other instances of negation may be looked for. And of these there are, of course, many, as is well known. Instances that are ready at hand, as suggested by our inquiry, are: the necessary and the not-necessary; the possible and the not-possible; the actual and the not-actual, and the like.

We can now go further. If there are contradictory alternatives, whether these be the specific instance of the affirmation and denial of the principle of alternatives itself, or some other instance, then there must be still other objective states of affairs or propositions that are necessary. First, there must be *distinctness*, and the *individuality* of that which is distinct. Affirmation and denial, positive and negative, "yes" and "no," are not the same, but each is

distinct from the other, and *as distinct* each is an *"individual."* "Individuals" as thus defined may be complex, as, for example, are the two distinct geometries called the Euclidean and Riemannian respectively.

But still further. If, for example, the principle of alternatives is presupposed by its denial, then there must be *the relation of presupposition* between that which presupposes (namely, the denial) and that which is presupposed, and there must also be the relation of contradictory opposition between the principle and its denial. But this relation has been considered. It is the relation of negation. But that which *presupposes* and that which is *presupposed* are related also in a way other than by negation. That which is presupposed is logically prior to that which presupposes, so that between these two there is *order*.

And still further. If there are *distinctness*, and *individuals* that are distinct, whether such distinct individuals are the principle of alternatives and its denial, or the possible and the impossible, or some other pair of contradictory opposites, then there is *plurality*. But the plurality is not limited to "two" whatever "two" may be or mean. For it has previously been found (1) that alternative possibilities are necessary, so that there *is* necessity: and (2) that if there *is* necessity, then there *is* (or must be) *actuality*. Possibility, necessity and actuality are, then, distinct from one another in a different way from that in which positive and negative are distinct. There are, then, *distinct pluralities*. For *lack* of better names, I shall call these respectively a "dual plurality," *and* "manyness," "manifoldness," "groupiness," or "manifold plurality."

In this way I discover, by which I mean that it is disclosed to me, that the following objective states of affairs are necessarily true propositions:

(1) There are alternative possibilities.
(2) There is negation, or contradiction.
(3) There is distinctness.
(4) There is individuality.
(5) There are relations.
(6) There are propositions.
(7) There is order.
(8) There is duality.
(9) There is manifoldness.

Each of these is a proposition in that each is a relation between reality or actuality and some aspect of reality. Each is a necessary aspect of reality by that criterion of necessity which has thus far been used, namely, the criterion of presupposition by denial. Alternative possibilities, negation, distinctness, individuality, rela-

tions, propositions, order, duality, and manifoldness are each necessary in that their denial is impossible. Their denial is impossible in that to deny them is to presuppose them and thus really to assert them.

To this limited list of necessary propositions I would now add the following:

(10) There are instances of each of these (the above) different kinds of reality.

(11) There are the alternative possibilities, contradictories and contraries.[10]

(12) There are these two kinds of alternatives to necessity.[11]

That each of these propositions is necessary is disclosed by finding that each is presupposed by its denial or its negative.

Such a list of propositions that are necessarily true is perhaps meagre, and the propositions themselves are certainly abstract. But this they must be, since they are those propositions which are necessary to the realm of all possibilities. If there are possibilities, *and it is only another possibility that there are not*, then there are necessities, and also, as we have seen, impossibilities and actualities. There are also actualities, since possibility, impossibility, and necessity is each *an actuality*. Actuality is, indeed, itself actual or real. The world, the universe, is the realm of these four actualities, one of which, the possible, includes the existent world and, therefore, "existence."

There may be other necessarily true propositions. There doubtless are. But the major question of this paper does not put me under any obligation to make the list complete. *Are there any necessarily true propositions? There are.* The foregoing list is made up of a few propositions that are of this character. This is the answer, then, that I thus far give to the question with which I started.

In contrast to these few necessarily true propositions, I find that most other propositions are not necessarily true. They are mere possibilities, actual or real possibilities to be sure, but not necessities. Thus, surveying the group of physical and natural sciences, I find no proposition that is necessary. In physics, the Law of the Conservation of Energy, the Second Law of Thermodynamics, The Principle of Least Action, Einstein's Law of Gravitation, are each only one possibility, alternative to other possibilities. At the present time, in the development of science, these laws are regarded as formulating certain aspects of nature, or of what exists, but the existent is only one instance out of many possibilities. By the

[10] P. 318.

[11] P. 315.

existent, or at least "the physical existent," I mean that specific possibility which is selected at the present time upon the basis of sense-given data and the consistent interpretation of these data by reason. But a system of nature in which none of the above principles should be a part, is quite conceivable in the sense that it is quite as consistent internally as is that system which we now call "nature." Only yesterday physical nature was held to be a system that conformed to the principles of the Newtonian Mechanics and the Euclidean Geometry, when behold! Einstein and his collaborators show that the conformity is with another possibility.

Search as I may, then, in the field of chemistry, biology, and the other natural sciences, I find in these realms no proposition, no law, no theory, no fact, that is necessary. A static world is as possible as an evolving and dynamic one; the Lamarckian Theory of organic evolution is as good a logical possibility, that is, is as consistent a system internally, as the Darwinian Theory. In the field of chemistry I find it not to be necessary that there should be only 92 different chemical elements, or that the proton should attract the electron at certain distances. These are the specific possibilities that are now regarded as existents, but the alternatives to them are quite as consistent as they, and one of these alternatives may to-morrow take their place as the so-called existent world.

Surveying the whole realm of the natural or physical sciences, I find, then, no instance of existence that is necessary. Even matter, energy, space and time are not. All that is necessary is that which is common to the whole realm of possibilities of which the existent is that specific possibility that happens at the present time to be selected for this rôle. But, although I find no instance of existence that is necessary, what I do find is this: That the existent world must be *either* one that evolved in every respect, *or* one that did not evolve, at least in part; that the total number of chemical elements must be either 92, or not 92; that all masses must attract one another either in accordance with the Newtonian formula for gravitation, or that some, and perhaps all masses, do not do this. Neither one of the alternative contradictory possibilities of each of these pairs is necessarily true, but the proposition that is of the form "*either p or* not *p* is true," *is* itself a necessarily true proposition.

But these are merely other instances of the general principle that alternative possibilities, either contradictories or contraries, are necessary, although no one possibility is of this character. Indeed, as regards this principle, one may say that necessity itself must be either necessary or not, and, if it is not necessary, that it must be either possible, or both possible *and* actual, or impossible. But that it is not impossible is shown by the fact that it is not necessary to

deny it. Necessity is not self-contradictory. And it is more than possible, since its actuality is presupposed by the disjunction, that it *must* be either necessary or not. For this is itself an instance of necessity.[12]

But if there are no necessarily true propositions among the physical and natural sciences, may it not be that the examination of geometry will disclose such propositions? Formerly, prior to the work of Saccheri, Bolyai, Lobatschewsky, Riemann, and others, and in the days of the supremacy of Euclid, it would have been thought that in the science of space it would be possible to find propositions that are necessarily true, but since the advent of the geometries that are connected with these names, this is no longer maintained. All geometrical systems are, as is well known, of the general form, "if *p*, then *q*." *P* is *assumed* or asserted in the form of postulates and definitions, and the implied consequences of these postulates and definitions are deduced. All the propositions of a geometrical system, both postulates, definitions, and deductions from these, are consistent with one another, in the sense that they form a system within which there are no contradictions. But not all of these propositions imply one another. The postulates and definitions are independent of one another in this sense.

Each system is true only in the sense that it is disclosed as a consistent and partially implicative system, and not in the sense that it is an account of empirical space. One of the systems, namely, the Riemannian, seems at the present time to be true also in this latter sense; the other systems, the Euclidean and Bolyaian, are examples of what I mean by real or actual possibilities. None of the postulates and definitions of any of these systems is a necessary proposition. There is the complete freedom to postulate and to define, so long as a specific set of postulates and definitions give a consistent and partially implicative system, but there is no demand or necessity for "starting" with one set of postulates and definitions rather than with another. One must conclude, then, that no "material" proposition in geometry is necessarily true. It is only in respect to those propositions that are presupposed by all of these alternative systems that one can say that there are in geometry any necessary propositions.

Does pure mathematics, as distinct from geometry, contain necessary propositions? Here I am on more uncertain ground, because I find less unanimity of opinion among those who have thoroughly investigated the logic of mathematics. But my own opinion is, that pure mathematics is, in its logical structure, very similar to geometry. This means that pure mathematics is the group of alternative logical systems that can be derived from specifically different postulates and

[12] Cf., pp. 328.

definitions by discovering what these postulates and definitions imply. "Pure mathematics is," then, in the frequently quoted words of Mr. Russell, "the class of all propositions of the form '*p* implies *q*' where *p* and *q* are propositions containing one or more variables, the same in the two propositions, and neither *p* nor *q* contains any constants except logical constants." [13] Postulates and definitions in pure mathematics thus concern, not properties that are given in sense perception, but those properties by virtue of which entities are differentiated logically. It is in this respect that I find that there is in mathematics a certain freedom both to postulate and to define. For, according as one set of postulates and definitions is made, or another set, there results, logically, one or another type of *logical order*. Different types of logical order involve different relations, which relations have, as is well known, been classified; and relations are between terms. But whatever the specifically different types of relations may be that are present in any mathematical system and that give "order," and whatever may be the specifically different terms between which these relations hold, there are present, at least, relations and terms, propositions, manifoldness, duality, order, distinctness, individuality, and negation.

The appeal to the natural and the mathematical sciences does not result, then, in the disclosure of any necessarily true propositions other than those that were previously discovered. Accordingly, it remains to consider other methods, if there are such, of finding necessarily true propositions. Such other methods consist in the use of other possible criteria of necessity, besides the criterion of presupposition by negation, which has previously been employed.

These other possible criteria are, (1) That proposition which is self-evident is necessarily true. Example: The whole is greater than any of its parts. (2) That proposition whose opposite is inconceivable is necessarily true. Example: Everything must be the effect of something else. (3) That proposition which is revealed by some divine source is necessarily true. Example: God exists. Each of these criteria may be examined in two ways, first by that criticism which has developed in regard to those propositions that have been regarded as necessarily true by one or more of these criteria, and, secondly, by testing each of these criteria by the other two as well as by itself.

As regards the first criticism it must be said, that none of these criteria is now regarded as a test for necessity. Too many propositions that once were accepted as necessarily true because they were self-evident, or because their opposite was inconceivable, or because they were maintained to have been revealed by God, are no longer so accepted. The whole is not always greater than its parts.

[13] *Principles of Mathematics*, p. 3.

This does not hold of infinite wholes. Not everything has a cause. Causation itself does not. And God's existence is for many, not a necessity, but only a useful fiction. Further examples of such exceptions might be supplied almost indefinitely.

The second method of criticism, that of testing each of these criteria by itself and by the other two, gives no different result. It is not self-evident that that which is self-evident is necessarily true. Even if this were the case to some one, the general discrediting of self-evidence would discredit it here, as applied to itself; likewise with each of the other criteria, both as "applied" to themselves, and to each of the other two. At best these criteria may be used only to suggest postulates, assumptions, and definitions, as in the case of the Euclidean geometry, and, therefore, they are only psychological criteria by the use of which alternative systems are initiated.

Can not the same criticisms also be made of the criterion of presupposition by negation, so that one can say "It is not necessarily true, that that which is presupposed by its own negation is necessarily true?" Is this test of presupposition by denial, or by negation, self-evident? Is its opposite inconceivable? Is it revealed of God? Even if it were each one of these, it would not be necessarily true, owing to the historical discrediting of each of these tests. But, for some of us, it is none of these.

Is the test, then, finally, true by its own test? In other words, does the denial of this test presuppose it, so that one can say that such a denial is self-contradictory, and, therefore, that the test can not be denied, but must be asserted? Briefly, is the test an instance of itself? The answer to this question is, I think, "No."

The proposition, *There are propositions,* is necessarily true, because its negative or denial, *There are no propositions,* is an instance of itself. The denial is thus self-contradictory, and impossible. Likewise with the proposition, *There are alternatives.* The negative in this case is itself *an alternative.* But the negative of the proposition, *That which is presupposed by its own denial is necessary, is not self-contradictory.* That negative does not presuppose this proposition. That negative *is* a negative, but it is not a self-contradictory one. It is merely another possibility, another alternative, but an actual possibility, an actual alternative. All that the denial of the criterion that is under consideration presupposes is, then, not the criterion itself, but the principle of contradiction or negation.

We reach, therefore, the important result that *the criterion, that that which is presupposed by its own denial is necessarily true, is not itself a necessarily true proposition.*

What, then, becomes of necessity, or of so-called necessarily true propositions, if the sole surviving criterion for these is itself not necessarily true?

This is, perhaps, the crucial question of our whole inquiry. Can necessarily true propositions be disclosed by the use of a criterion that is not itself necessarily true?

The answer to this question is, that such disclosure is not an impossibility (by all our definitions of this term). It is *a possibility,* and, indeed, as good a possibility as the contradictory opposite. The criterion, that that which is presupposed by its own negation is necessarily true, is itself a proposition that has its place in a system of propositions. It is, then, an actuality, but not a necessity, for one can deny it. But that this criterion, though not itself necessary, should nevertheless reveal that which is necessary, is possible in that this is consistent with certain other propositions. Thus there is the general proposition, which can be derived inductively, that a means of disclosure need not be completely similar to that which is disclosed; a method of testing completely like that which is tested. A microscope discloses living cells and their parts, but a microscope is not a cell. A telescope reveals the stars, but is not itself a star. Reason discloses the fact of non-rational processes, and by using the relation of implication we find that not everything is implicatively related to everything else. For such examples one can generalize to the principle, that *the means of disclosure and the "thing" disclosed need not be completely similar.* That they are dissimilar in some respects is a possibility. Accordingly it is a possibility, that is, a proposition itself consistent with, if not, indeed, implied by this general principle, that *a criterion which is not itself a necessary proposition should reveal propositions that are necessary.* Means of disclosure and "thing" disclosed are then partly similar, partly dissimilar. One *proposition* is disclosed by another *proposition;* but a *necessary proposition* is disclosed by one that is *not necessary.*

It is *possible,* then, that the criterion of presupposition by negation, although itself not a necessarily true proposition, should be used as a means of disclosing propositions that are necessarily true.

But is it *necessary* that this should be the case? Or is the alternative possible, that because the criterion is itself not a necessarily true proposition, those propositions which are disclosed by its use should also not be necessarily true? I discover nothing impossible, nothing self-contradictory in this alternative hypothesis. It is quite as good a possibility as the opposed view. *But,*—and I emphasize the "but,"—by this hypothesis there could be no necessary truths by this or any other criterion. For, if there can be no necessary propositions because there are no necessarily true criteria of necessity, then in turn there can be no necessarily true criteria, because there are no necessary propositions. The "vicious circle" is evident.

This second possibility would seem, therefore, to do away with

or to deny necessary propositions altogether. And yet it would seem to be difficult to do this. For there does seem to be such a reality as *necessity*, and if there is, then there can be instances of it. First, there *may be* such a reality as *necessity*. For, if there are possibility, impossibility, and existence, each of these being itself *a* possibility, then *necessity is also another possibility, another alternative*. But it is more than a possibility; it is also an actuality. For, since necessity itself *must be* one of these four alternative possibilities, there is the fact of this necessity itself. Or one might also say, using contradictory alternatives, that, since necessity *must itself be either necessary or not necessary, necessity itself is*.

Are there, now, instances of this reality? The very disjunction just given would seem to be one such instance, so that the class of necessary "things" is not a null-class. And if there is one instance, other instances are possible. This means that necessary propositions are not impossible. They are possible. And they are possible, although they do not include, or may not include, the criteria or tests by the use of which the endeavor is made to discover them. That the criteria for necessary propositions need not themselves be propositions of this character is shown by the fact that, if some propositions are necessary, it does not follow that all are.

It is possible, then, that necessary propositions should be disclosed by criteria which are not themselves necessary propositions. And such a criterion is the principle, that that is necessary which is presupposed by its own negation.

But a further necessity is therewith disclosed, and that is this: That the necessity of necessary propositions is *independent* both of the proof that there is such necessity, and of the necessity of the criteria by which such proof is made. This means that *necessity is a property of what is disclosed* and not of the means of disclosure. It is not an epistemological or methodological character, but an *ontological* one.

It is only the particular propositions which *are regarded* as necessary that are dependent on the means of proof and disclosure, and therefore any set of propositions that are offered as necessary by one criterion or another, may not be this. Certain self-evident propositions were formerly regarded as necessary, but now are no longer so regarded. To regard a proposition as necessary is not to make it so. And so all lists of necessary propositions that have been offered up to the present, including my own, may have to be scrapped. But even this would not alter the conclusion that *there are necessary propositions*. This proposition is disclosed as being independent of the knowledge of just what propositions are necessary. From the one, the other can not be deduced, for the very simple reason, that the one does not imply the other.

Yet to discover, or to endeavor to discover, what propositions are necessary requires a method or means of discovery, and of all those means which have been offered up to the present, the principle of presupposition by denial seems to be of greatest promise—whatever this may mean. But this principle itself is, as we have seen, not itself a necessary true proposition. And even if it were, there is always a hazard in applying it. Descartes, who used this principle to show that the proposition, *cogitans est*, is necessary, would not today convince the behaviorist. Who is right, Descartes or Watson? And so I might, perhaps, well hesitate to offer any list of propositions as necessarily true. But I am nevertheless convinced, for the reasons given in this paper, *that there are necessary truths.* And with this conclusion I have answered the question with which I started.

This ought to be the end, but it is not. For I can not refrain, before I close, from giving a partial list of propositions that are not necessarily true, although they are often regarded as being of this character. As promising candidates for this list, I mention the following:

(1) Everything implies everything else.
(2) All related terms depend on, and are modified by, one another.
(3) Truth is coherence in the sense of the mutual dependence of related terms.
(4) Truth is satisfactory working or outcome, validation, or confirmation.
(5) Truth is a "copying relation" or a one-one correspondence between idea and object.
(6) A true proposition is (materially) implied by any proposition.
(7) A false proposition implies (materially) any proposition.
(8) A proposition is a judgment.
(9) Necessary propositions are human inventions.
(10) Necessary propositions are laws of the mind.
(11) The universe is an absolute unity (in some other sense than totality).
(12) Everything is experience.
(13) Everything evolves.
(14) Everything is mind.
(15) Everything is matter.
(16) Everything is either matter or mind.
(17) There is matter.
(18) *Esse est percipi.*
(19) *Esse est concipi.*
(20) Everything has a cause.
(21) Something can not come out of nothing.

(22) Everything is purposive.
(23) The universe is completely rational.
(24) God exists.

Some of these propositions are self-contradictory, and so impossible; others are not of this character, and so may justifiably be selected (postulated) as major premises for certain philosophical systems, but none of them is necessary.

This paper has dealt very largely with what traditionally have been called "categories." It has dealt with actuality, necessity, possibility, impossibility, and existence. It has also dealt with *instances* of each of these categories. Accordingly, it is fitting to summarize, at the conclusion of the paper, the relations between these five categories, and the instances of each, as I would maintain that these relations are disclosed by this investigation.

(1) Actuality, necessity, possibility, impossibility, and existence are all actualities. Even actuality is itself *an* actuality. Actuality is, then, the *genus* for all five, as *species*, including itself. But there are also necessities, possibilities, impossibilities, and existents,—instances of the necessary, the possible, the impossible, and the existent.

(2) Whatever *is*, or, whatever is actual or real, *must be* either necessary or possible or impossible or existent, so that there *is* necessity. This disjunction is at least one instance of this category.

(3) Necessity, however, not only *is, but it is necessary.* For, although it is not presupposed by its own denial (its negative), since its denial or negative is not an instance of itself, nevertheless, since necessity *must itself be either necessary or not,* it is presupposed *in this disjunction* between itself and its negative. *Necessity is thus a necessity.*

(4) Possibility is *a possibility* and an actuality, but it is also *a necessity.* For necessity could not itself be necessary unless it were possible. The necessity of necessity accordingly implies *the necessity of possibility.*

To our previous list of necessary propositions we may, then, add:
(13) There is necessity.[14]
(14) There is possibility.

(5) Impossibility is an actuality and also a possibility; it is not an impossibility. Whatever is actual is possible. But impossibility is not necessary.

(6) Existence is a possibility and an actuality, but it is neither a necessity nor an existent. An existent likewise is not a necessity, but it is an actuality and a possibility.

The relations between these five kinds of reality may be illustrated by an analogy.

[14] Continuing the numbers from p. 320.

The universe may be likened to the game of "auction." There are the *existent* hands, the hands just dealt, and the way they are played. The four hands lie there on the table. But they are only *one possibility.* There are a large number of other possible hands and possible ways of playing them. Necessary to this range of possibilities are certain rules. Given these rules, the *range of possibilities is necessitated,* although no one possibility is. And certain hands, for example, one containing five aces, and also certain plays, are *impossible.* This whole "universe of discourse, is an actuality. The existent universe is "one deal of the cards."

In conclusion I may say that it is not a necessary proposition that the "state of affairs" portrayed by this paper is dependent on my mind or consciousness or "knowing." Nor is the account itself a system of necessary propositions, that is, one that is necessarily true. But it is at least one possible account.

Are there necessarily true propositions? The answer is: There is at least one such proposition, and that is the proposition, that there *must be* either necessarily true propositions or not.

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BOOK REVIEWS

The Public and its Problems. JOHN DEWEY. New York: Henry Holt & Company. 1927. Pp. vi + 224.

Those admirable essays which Professor Dewey has contributed from time to time through a long series of years to public problems have whetted a healthy appetite for a systematic study of political philosophy from his pen. This book, brief as it is, will do not everything, but a great deal, in this direction. If anyone's writing deserves the name "pregnant," it is Dewey's; he always accomplishes more than his title implies. The main intention of this book is to diagnose the predicament of contemporary democracy, to show how it arose, and to indicate a way out: but the four chapters in which this is done are preceded by two chapters, on the public and on the state, which constitute a rapid sketch of a general theory of political order.

This theory is set in direct contrast to all theories which would account for the state by "special causal forces or agencies," whether by deliberate invention or contract or divine institution or specific human instinct or some peculiar and constant nisus in human nature, such as an interest in the rational solution of quarrels. Such causal theories commonly mistake for a cause what is really an effect: men who are molded by any sort of institution develop an accustomed-

ness-to, and so a pseudo-need for, that sort of institution. Dewey proposes to base his theory on observable behavior and its consequences, without reference to any *ad hoc* dispositions.

He contrasts his theory also with all theories which would make the state a matter of inclusive or primary social importance. The state is important, but its importance is residual and variable. If other social groupings take good care of their by-products, the state may have little to do; if they leave many secondary results of their activities unattended to, the state may be highly necessary. But in any case, these other groupings are first both in time and in importance; and the state only arises when the remoter consequences of these original dealings become so "extensive and enduring" that they can not well be ignored.

The parameters, then, of Dewey's theory are these: (1) the fact of association, taken as a datum; (2) the consequent fact that actions affect other persons; (3) the distinction between direct, intended effects and the indefinitely extended fringe of indirect, unintended effects,—let us say, the extra-effects; (4) the further distinction among the extra-effects of the sporadic from the extensive and enduring; (5) the presumption that persons reached by these significant extra-effects will be similarly affected and will have similar judgments as to whether the effects are desirable or undesirable, and therefore (if they observe this fact) have a common interest in dealing with them. (6) The public is defined as the group of all persons who recognize themselves as having a common interest in the significant extra-effects of action. (7) When such a public acquires representatives or officers for controlling these extra-effects, it has become a political state.

These parameters are for the most part matters of fact. The hypothetical element is the conception of the public. It is not John Locke's "body politic"; for it requires no act of agreement to bring it into being, but only an act of mutual recognition. Furthermore, it is not composed of separable individuals, but of already associated, tradition-bearing men and groups. Otherwise, its discovered concerns resemble those of Locke's body politic, namely, the effective regulation of social incidents by officers rather than by each man for himself, and the normal subordination of these officers to that definable purpose. So far as they are legitimate, "all governments are representative" (76).

These premises provide a notably simple and pertinent account of the meaning of political democracy; it is, in essence, nothing more than a set of devices for holding governments to their business as representatives of the public. "Democracy is not an alternative to other principles of associated life. It is the idea of community

life itself'' (p. 148). This does not mean that democracy was created for this express purpose: for, as Dewey repeatedly reminds us, democracy is no more a result of a drive toward democracy than states are the result of a plan or instinct to make states. ''It is mere mythology to attribute such unity of result as exists to single force or principle.'' There were long-standing evils to be remedied —especially the bedevilled, irrelevant methods of getting officers, and the use of office for private rather than for public ends—evils which grew naturally not more out of original sin than out of the drift of all concentration of power in the absence of any clear theory of the function of the state. But these evils had existed, and had been more or less clearly felt, throughout the course of political experience: if a particular and successful series of efforts to get rid of them is made at a particular epoch in history, that result is not to be explained by any new clarity in the aim, but by the fact that the social elements which most felt the pinch of those evils at that time were opportunely endowed with power and prestige.

It was primarily the new economic motives which animated the disposition to assert rights. Machinery in the hands of a capable middle class, conscious of new enjoyments and of new powers, is an energy that can not be restrained by a network of obsolete rules. Thus the ideology of individual rights and suffrage becomes an instrument for bringing government to book in the interest of industry and property. Modern liberalism was developed under conditions which checked its emancipating influences at the point where they brought the maximum benefit to those forces which have since been making big business. The philosophy of individualism reflected the new-born energies of the entrepreneur group; and hence we have the paradox that the isolated individual and his rights were most widely celebrated in theory while the system was brewing in which the masses are now most thoroughly submerged. For now we are members, less of one another, and less of the state, than of those ''great impersonal concerns'' which, with vast social utility and with some disutilities, stand between us and the sky.

So far, the argument has been that democracy as a partially realized fact is an incidental result of changing conditions of life in which economic forces have taken a primary hand; while the ideology of democracy has played a rôle, at first passive (''reflecting'' new conditions) and then active, but never active enough and never as broad as the nominal scope of the ideas. And while the ideas worked out their logic (I trust Dewey will not seriously object to this way of expressing the process whereby the working classes deduced in their own behalf the corollaries of the ''rights of man''), other consequences not contemplated by anybody have created new

publics, while obscuring the old outlines and not revealing the new; and they have done this faster than the liberating process could run its course. With all the development of political machinery that has gone on in the last century, we are farther from democracy, farther from a genuine control by the public of the conditions of its life, than we were in 1832. There is, in a sense, a Great Society, greater than ever before; but it is a society of standardized individuals linked by way of abstract functions in an organization of abstract interests: it is not a Community, and democracy can not exist until it becomes one.

It is evident that the account of the history of modern democracy which leads to this penetrating, and I believe just, diagnosis of the major malady of contemporary politics, concedes a great deal to one form of the economic interpretation of the history of thought. It is equally evident that in so far as the economic interpretation is accepted, instrumentalism is set aside. For if ideas are instruments they must do work; that is, they must bring their users where they intend to go: that is, again, so far as ideas are instrumental, there is a conscious directionality in history. Without doubting the reality of those contexts of liberalism which Dewey so skilfully exhibits, I would raise the question whether he has not surrendered too much of the original instrumentality of these ideas, which were born, after all, in an era of keen political self-consciousness. The important truth that men always produce *other than* they intend is the shadow of the truth that they always produce *something of* what they intend, and that this passage from intent to achievement is what makes history go, and always constitutes its central current. Of such purposiveness in the use of ideas the rise of modern democracy would seem to furnish some of the most striking instances, perhaps more so in the early demands for freedom of conscience, and in the revolutions in America and France, than in eighteenth- and nineteenth-century England.

I wonder if I am right in thinking that in emphasizing the rôle of economic conditions, Dewey is speaking to some extent under reserve. For even while pointing out that the notion of individual liberty was chiefly effective in the hands of merchants and manufacturers who had to struggle against the rigidity and intrusiveness of governments, he notes that "the need of some control over them (these new modes of association) was the chief agency in making the government of these states democratic . . ." (p. 98). Of course, if democracy is primarily a result of the struggle of the public to control the results of business, it is not primarily a result of the struggle of business to control government: and in so far as it is a result of conscious struggle at all, the instrumental ideas were weapons, and not "reflections" of conditions brought about by other forces.

In any case, Dewey has no intention of yielding the main issue to economic determinism. However much the result to which history has led may be unintended, the existing situation must be faced with intention: the problem of creating a genuinely democratic community is "primarily and essentially an intellectual problem" (p. 126). The cure for the ills of democracy is, for Dewey also, more democracy—not in the sense of more machinery, but in the sense of a more adequate grasp of the idea. The Great Community must be ushered in by more day-to-day knowledge of socially significant truth, by a current social enquiry freely pursued and freely disseminated, and by the enlisting of art in the presenting of that scientific self-knowledge whose fascination, in our present jaded state of interest, our public does not understand. These are presently pertinent means to a goal which Dewey evidently regards as persistent, simply because it is "the idea of community life itself" and can not be abandoned. It is only in this sense that he can say "Invent the railway, the telegraph, mass manufacture, and concentration of population in urban centers, and some form of democratic government is humanly speaking inevitable" (p. 110). These things, taken by themselves, have (unlike Carlyle's printing press) tended to produce an un-democracy; and it is just this undemocracy that is intolerable, and toward whose remedy we can now deliberately aim.

It is impossible to present here the substance of the final chapters, freighted as they are with wise counsel toward methods of equipping the public for its moral task of achieving an adequate intelligence. I wish, rather, to revert to the general political principles outlined at the beginning, raising certain questions which, at their best success, may lead to further definitions of that theory.

1. Do the extra-effects of action outline a public, or does a pre-existing public delimit the range of extra-effects?

No two actions have the same range of extra-effects, and no two kinds of action. In the prairie country a citizen must not light a grass fire in his back-yard, nor in the old days must he provide Indians with fire-water: each deed had an obvious physical spread of extra-effects, but these spreads were not identical. A forgery committed in the same settlement would also have a spread of after-effect, like a stroke in a bunch of nine-pins, but its outline would again differ, and would probably leap more rapidly over local limits. If there is a common multiple or containant of a large number of such spreads, it would seem to be roughly outlined (and, of course, never strictly confined) by barriers of language, custom, and geography—that is, by a pre-existent community.

2. Is the public concerned merely, or even primarily, with extra-effects of action; or is it primarily concerned with those same direct effects which are the objects of the individual agents?

A murder, a theft, the forgery we mentioned, any felony within a primary social group concerns the public. Does this concern exist *only* because of the possible spread of such deeds? In that case, no murder is punished because of itself, which is absurd: and further, the possible spread, not merely through the possible further activities of the murderer, but through suggestion and imitation, is unlimited by any boundary save that of rumor itself. On the face of things, the state is not concerned with actual extra-effects of crime: it acts on the assumption that "this sort of thing won't do," each case of it being bad in the direct incidence of its fall. In the long run, the state is concerned with extra-effects, because it is concerned with the total meaning of actions; but it would appear to be concerned first of all with precisely those immediate effects which the individual means to have, and therefore, in various cases, it enquires particularly into his intention.

3. The outlining of states can, indeed, never be understood by alleging any universal disposition of human nature. These outlines are particular, and bear the impress of particular deeds. As a matter of history, is it not true in general, that these outlines exist because publics had something to *do,* rather than because they had something to *suffer or enjoy?*

The common interests in effects and extra-effects never stop at political boundaries, and have never stopped there. Trade with all its common concerns has straddled community lines from the beginning. Neither our prairie fire, nor our drunken Indian, nor our plague-bearing rat, nor our inspired Mahdi, respect the outlines of nations. Common interests are only feebly checked in their spread by the political outlines of primitive or of modern times. But there has always been a limit to the group that could realize an impulse to *common action.* That limit has varied with the capacities of leaders to create a common set of will, and with the facilities for organization. The tribes of inner Arabia in the sixth century, dispersed and quarreling among themselves, have many tangible common interests, but can get no community out of them. Mohammed appears and makes a state of them, not by devising a system of inner administration (though that has to be worked out by degrees), but by training their imaginations to a common achievement, in the course of which the body within which those elementary common interests echoed was enlarged many times. Historically speaking, states appear to have been outlined, not by the scope of judicial business, but by the shore line of some maximal commotive impulse or cultural idea, an incentive to community enterprise in what we now call the executive department of government. The fact that these enterprises have frequently been wars ought not, I think, to conceal the fact that they have often had, and are capable of having, quite other motivation.

From either view of the historical meaning of political boundaries, we would infer their very relative importance, and the wisdom of keeping them open to revision. But it seems evident that the judicial community of mankind is capable of a more rapid extension than the executive community; and the world may become a Public, in Dewey's sense, long before it is capable of becoming a state. Perhaps the conception of the Public, as Dewey has expounded it, will prove to be the more significant conception for the future of mankind.

WILLIAM ERNEST HOCKING.

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